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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,746	10/26/2001	Mamiko Miyanaga	SOEI/0013	9682

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APPLIED MATERIALS, INC.
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EXAMINER

STINSON, FRANKIE L

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/045,746

Applicant(s)

MIYANAGA

Examiner

FRANKIE L. STINSON

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1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (U. S. Pat. No. 6,673,262) in view of Matsuse et al. (U. S. Pat. No. 5,951,772).

Re claim 1, Mori is cited disclosing a cleaning method for a vapor phase deposition apparatus (see col. 2, lines 1 1-16 and col. 3, line 59 through col. 4, line 3) for forming film (tungsten, silicon, see col. 3, lines 31-40) onto a substrate by introducing film forming gas into a chamber (the remote excitation chamber see col. 4, line 59), comprising: inserting a substrate into the chamber (col. 3, line 59 thru col. 4 line 11) activating a cleaning gas including a compound containing fluorine atoms by exposure to microwaves (see col. 3, lines 49-52 and col. 4, lines 3-1 1) and then introducing the cleaning gas into a chamber (the reactor) that differs from the claim only in the specific recitation of the apparatus having a showerhead and the step of the showerhead being raised to a temperature greater than the temperature of the showerhead during film formation and the substrate being removed from the chamber. Matsuse'772 discloses a showerhead (10) and the step of the showerhead being raised to a temperature greater than the temperature of the showerhead during film formation (col. 17, lines 7-23) and the substrate being removed from the chamber (col. 12, lines 23-31). It therefore would

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have been obvious to one having ordinary skill in the art to modify the method of Mori, to have the temperatures as taught by Matsuse'772 for the purpose of enhancing the cleaning of the chamber and for ensuring that the entire chambers surface is cleaned. As for the Re claims 5 and 7, Matsuse'772 discloses the temperature as claimed.

3. Claims 2-4 rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior as applied to claim 1 above, and further in view of Matsuse et al. (U. S. Pat. No. 5,647,945).

Claims 2-4 define over the applied prior art only in the recitation of restriction of a cooling medium and the heater in the showerhead, for the purpose of raising the temperature of the showerhead. Matsuse'945 is cited disclosing the raising of the temperature by restriction the flow of cooling medium ("COOLING WATER" as at 125, see fig. 6) and further discloses the heater (124). It therefore would have been obvious to one having ordinary skill in the art to modify the method/process of Mori, to include a cooler/heater for the showerhead as taught by Matsuse'945. In the art various devices have been employed to either heat or cool, to employ one over another is merely a design choice since they are essentially the functional equivalent of each other (see MPEP 2144.06 SUBSTITUTING EQUIVALENTS KNOWN FOR THE SAME PURPOSE).

2. Applicant's arguments filed Sept. 18, 2006 have been fully considered but they are not persuasive. In regard to the applied prior art failing to disclose the insertion and removal of the substrate from the chamber, note the passages in Mori and Matsuse as noted above.

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANKIE L. STINSON whose telephone number is (571) 272-1308. The examiner can normally be reached on M-F from 5:30 am to 2:00 pm and some Saturdays from approximately 5:30 am to 11:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached on (571) 272-1700. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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FRANKIE L. STINSON
Primary Examiner
GROUP ART UNIT 1746